# Message Text

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ACTION EB-11

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E.O. 11652: N/A
TAGS: ENRG, IT
SUBJECT: ALTERNATIVE ENERGY SOURCES

STATE ALSO FOR T/IEP

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1. BEGIN SUMMARY: ITALY'S DOMESTIC ALTERNATIVE ENERGY SOURCES ARE NATURAL GAS AND GEOTHERMAL. NEW GAS FIELDS BEING DEVELOPED AND EXPLORATION CONTINUING. GEOTHERMAL SOURCES, EVEN IF FULLY DEVELOPED, WOULD PROVIDE ONLY A SMALL PART OF TOTAL ENERGY CONSUMPTION. USE OF DOMESTIC COAL/LIGNITE DEPOSITS RAISES SEIROUS POLLUTION PROBLEMS DUE TO LOW QUALITY, HYDRO POTENTIAL ALMOST FULLY DEVELOPED. ENI/AGIP IS SUBSTANTIAL GAS/OIL
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PRODUCER ABROAD AND IS EXPANDING PRODUCTION AND EXPLORNING AS

RAPIDLY AS POSSIBLE IN SEVERAL NON-OPEC AREAS. GOI HAS LARGE-SCALE NUCLEAR PROGRAM UNDERWAY WHICH WILLRUN THROUGH 1980'S END SUMMA RY.

2. STATE-OWNED ITALIAN OIL COMPANY ENI/AGIP IS CURRENTLY ACTIVE IN A NUMBER OF NON-OPEC COUNTRIES.

A. IN UK SECTOR OF NORTH SEA ENI/AGIP, IN ASSOCIATION WITH OTHER COMPANIES, HAS STRUCK GAS IN FIVE (5) FIELDS -- ANNA, DEBORAH, DOTTY, HEWETT AND JOSEPHINS -- AND IS EXPLORING ELSEWHERE. ENI/AGIP SHARE IN THESE GAS FIELDS IS FROM 17.26 TO 25 PERCENT.

B. IN NORWEGIAN SECTOR OF NORTH SEA, ENI/AGIP HAS 13.04 PERCENT SHARE IN EKOFISH, WEST EKOFISH, EKINOS, ELDFISK, EDDA, COD AND PART OF TORFELT FIELDS AND HAS SHARE IN RIGHTS IN OTHER (RELATIVELY UNEXPLORED) AREAS. AGIP OPERATIONS IN NORWEGIAN SECTOR ESPECIALLY PROMISING, WITH PRODUCTION LEVELS EXPECTED TO REACH 27 MILLION TONS OIL AND 13 BILLION CUBIC METERS NATURAL GAS PER YEAR.

C. ENI/AGIP IS PRODUCING 3 1/2 MILLION TONS OF CURDE OF OIL FROM EL BORMA FIELD IN TUNISIA (50 PERCENT INTEREST) AND FURTHER ONSHORE DEVELOPMENTAL AND EXPLORATORY ACTIVITIES ARE UNDERWAY. ENI/AGIP ALSO HAS OFFSHORE JOINT VENTURE DRILLING OPERATIONS.

D. ENI/AGIP IS PRODUCING OFFSHORE WITH ELF/ERAP IN PEOPLE'S REPUBLIC OF THE CONGO (CONGO-BRAZZAVILLE). FURTHER DEVELOPMENTAL WORK IS UNDERWAY.

E. WITHIN ITALY ENI/AGIP HOLDS EXCLUSIVE PRODUCTION RIGHTS IN PO VALLEY, WHICH IS MAJOR ITALIAN GAS AREA ALTHOUGH NOW DECLINING IN PRODUCTION. GAS FIELDS HAVE ALSO BEEN FOUND IN CENTRAL AND SOUTH ITALY AND IN SICILY, BUT NONE ARE CONSIDERED "MAJOR" FIELDS. 1972 GAS PRODUCTION IN ITALY WAS 13.3 BILLION CUBIC METERS. OFFSHORE EXPLORATION HAS TURNED UP RELATIVELY SMALL GAS FIELDS IN ADRIATIC AND IONIAN SEAS, THE MOST IMPORTANT OF WHICH IS OFF THE COST OF CROTONE. VERY SMALL OIL FIELDS HAVE BEEN DISCOVERED IN SOUTH SICILY BUT SIGNIFICANT QUANTITIES DO NOT APPEAR LIKELY. ENI/AGIP JOINTLY (WITH OTHER COMPANIES) HOLDS EXPLORATORY PERMITS FOR MOST OF ITALIAN SECTOR OF ADRIATIC,





WHICH IS CONSIDERED BY SOME KNOWLEDGABLE SOURCES TO HAVE PROMISING STRUCTURES, ESPECIALLY FOR GAS.

F. ENI/AGIP HAS JOINT OR EXCLUSIVE EXPLORATION AND DRILLING RIGHTS IN THE FOLLOWING AREAS: SVALBARD (SPITZBEGGEN) -- OFFSHORE EXPLORATION; MALTA -- OFFSHORE EXPLORATION WITH SHELL; MADAGASCAR -- EXPLORATION WITH ESSO; EGYPT -- DELTA DRILLING FOR GAS WHICH CURRENTLY DISTRIBUTED IN EGYPT; TANZANIA -- DRILLING IN A JOINT

VENTURE WITH AMOCO; THAILAND -- OFFSHORE JOINT VENTURE EXPLORATION IN GULF OF SIAM WITH TENNECO; NORTH VIETNAM -- EXPLORATION IN GULF OF TONKIN; ALASKA -- EXPLORATION; CANDA -- LABRADOR AND NEWFOUNDLAND OFFSHORE DRILLING; MAURITANIA -- DRILLING IN JOINT VENTURE WITH JAPANESE; NETHERLANDS -- OFFSHORE EXPLORATION. ENI ESTIMATES THAT ABOUT 70 PER CENT OF ITS OVERSEAS EXPLORATION AND DRILLING ACTIVITY IS OFFSHORE.

3. ITALY CURRENTLY IMPORTS LNG FROM LIBYA (3 BILLION CUBIC METERS EQUIVALENT ANNUALLY) AND WILL IMPORT NATURAL GAS BEGINNING THIS YEAR VIA PIPELINE FROM THE NETHERLANDS AND THE USSR (20 YEAR CONTRACTS FOR 6 BILLION CUBIC METERS ANNUALLY FROM EACH SOURCE) AND FROM ALGERIA (11 BILLION CUBIC METERS ANNUALLY FOR 25 YEARS) BEGINNING IN 1978. FURTHERMORE, ENI IS TALKING WITH THE IRANIANS ABOUT A POSSIBLE AGREEMENT FOR IRANIAN LNG.

4. ITALIAN COAL/LIGNITE PRODUCTION IS INSIGNIFICANT AND KNOWN RESERVES ARE SMALL. DEPOSITS ARE OF POOR QUALITY AND OF LOW CALORIC CONTENT. COAL IS PRODUCED ONLY IN SARDINIA (151,000 METRIC TONS IN 1972) AND OUTPUT IS DROPPING SHARPLY, CURRENT PLANS CALL FOR CLOSURE OF SARDINIAN COAL MINES IN NEAR FUTURE. LIGNITE PRODUCTION, CENTERED IN CALABRIA, IS ALSO FALLING SHARPLY AND WAS 837,000 METRIC TONS IN 1972. THE THREE THERMOELECTRIC POWER PLANTS UTILIZING THIS LIGNITE ARE USED ONLY DURING PERIODS OF PEAK DEMAND. IN 1972 THE STATE-CONTROLLED STEEL PRODUCER ITALSIDER SIGNED A 10-YEAR, 10 MILLION TON COKING COAL CONTRACT WITH AN AUSTRALIAN FIRM. CONTRACT, REPORTED TO BE WORTH $140 MILLION, SHOULD MAKE AUSTRIALIA ONE OF ITALY'S PRINCIPAL COAL SUPPLIERS.

5. FOUR (4) HYDROELECTRIC PROJECTS ARE CURRENTLY PLANNED/UNDERWAY IN ITALY. WHEN THESE ARE COMPLETED, PARACTICALLY ALL ITALIAN HYDROELECTRIC POTENTIAL WIL HAVE BEEN TAPPED. THESE FOUR PROJECTS





HAVE TOTAL CAPACITY OF 4,00 MW. HYDROELECTRICITY CURRENTLY ACCOUNTS FOR ABOUT 3.5 PERCEND OF TOTAL ITALIAN ENERGY CONSUMPTION.

6. ONLY FRACTIONAL PERCENTAGE OF PRESENT ITALIAN ENERGY CONSUMPTION IS IN FORM OF GEOTHERMALLY GENERATED ELECTRICITY. THERE IS FURTHER POTENTIAL FOR GEOTHERMAL ENERGY IN ITALY, BUT EVEN MAXIMUM DEVELOPMENT WOULD REPRESENT ONLY A SMALL SHARE OF TOTAL ENERGY CONSUMPTION.

7. ITALY HAS COMPREHENSIVE PLAN FOR CONSTRUCTION OF 19 NEW NUCLEAR ELECTRICITY GENERATING PLANTS BETWEEN NOW AND END OF 1980'S. BEGINNING THIS YEAR, GOI WILL CONTRACT FOR 5 NEW PLANTS EACH 2 YEARS. WHEN THIS CONSTRUCTION PROGRAM IS COMPLETED, ITALY WILL HAVE 22 REACTORS WITH TOTAL CAPACITY OF 20,000 MW. FUEL PROCESSING FOR THE REACTORS WILL BE DONE BY

EURODIF IN WHICH ITALY IS A PARTNER, THE USSR, AND THE US AEC.

8. IN TERMS OF URANIUM FOR FUELING NUCLEAR REACTORS, OVER THE LAST THREE YEARS ENI HAS BEEN ACTIVELY ENGAGED IN EXPLORING FOR URANIUM IN THE US, CANADA, AUSTRIALIA, SOMALIA AND ZAMBIA. THE SOMALIAN EXPLORATION HAS BEEN COMPLETED AND ENI HAS GIVEN A RE-PORT TO THE SOMALIAN GOVERNMENT. RECENTLY, ENI CONCLUDED AN AGREEMENT WITH PEKO MINES AND ELECTROLYTIC ZINC COMPANY OF AUSTRALIA FOR PURCHASE BY ENI OF PARTICIPATION IN "RANGER 1" URANIUM DEPOSIT, AUSTRALIA'S RICHEST KNOWN DEPOSIT. ENI'S SHARE OF PRODUCTION IS EXPECTED TO AMOUNT TO 8,000-10,000 TONS OF URANIUM CONCENTRATE ANNUALLY, WHICH SHOULD ASSURE IMPORTANT SHARE OF ITALY'S FISSINONABLE MATERIAL REQUIREMENTS OVER NEXT 15 YEARS. AGREEMENT MUST YET BE APPROVED BY AUSTRALIAN GOVERNMENT, HOWEVER.

9. ONLY OTHER ALTERNATIVE ENERGY SOURCE AVAILABLE TO ITALY WITHIN NEXT TEN YEARS MIGHT BE FAST BREEDER NUCLEAR REACTORS. OTHER SOURCES -- HYDROGEN, FUSION, MAGNETAHYDRODYNAMICS, SOLAR, ETC. -- APPEAR COMMERCIALLY FEASIBLE ONLY BEYOND THIS TIME FRAME.

10. GOI OBVIOUSLY CONSIDERS GAS, GEOTHERMAL, NUCLEAR, HYDRO, AND COAL TO BE CURRENTLY COMPATITIVE WITH OIL AS ENERGY SOURCES, SINCE ALL ARE NOW IN USE AND GAS, NUCLEAR AND HYDRO DEVELOPMENT PLANS ARE WELL UNERWAY. TO PROVIDE PERSPECTIVE FOR SUBSTITUTION





POSSIBILITIES, 1972 SHARES OF ENERGY CONSUPTION WERE:COAL AND LIGNITE - 7.6 PERCENT; PETROLEUM AND PRODUCTS - 74.0 PERCENT; NATURAL GAS -- 9.9 PERCENT; AND HYDRO-GEOTHERMAL-NUCLEAR ELECTRIC POWER -- 8.5 PERCENT. NATURAL GAS SHARE WIL INCREASE SIGNIFICANTLY IN NEAR FUTURE.

11. GOVERNMENTS, INCLUDING GOI, WILL PROBABLY CONSIDER TWO FACTORS WHEN MAKING DECISIONS RE ALTERNATIVE ENERGY SOURCES: PRICE AND BALANCE OF PAYMENTS EFFECT. GOVERNMENTS MAY NOW BE WILL-ING TO PAY MORE IN ABSOLUTE TERMS FOR DEVELOPMENT OF DOMESTIC ENERGY SOURCES WHICH REQUIRE LITTLE OR NO FOREIGN EXCHANGE OUTLAY, GIVEN BALANCE OF PAYMENTS IMPACT OF RECENT OIL PRICE HIKES.

12. EMBASSY NOTES THAT LAST THREE COURSES AT NATO DEFENSE COLLEGE HAVE STUDIED ENERGY SITUATION EXTENSIVELY; EACH HAS PRODUCED PAPER WITH RECOMMENDATIONS ON THIS SUBJECT.
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